Review of: "The edge rings of compact graphs"

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Potential competing interests: No potential competing interests to declare.

This study focuses on compact graphs, defined as those without even cycles and satisfying the odd-cycle condition. It demonstrates that for a compact graph and its edge ring 𝕂[ ], the Cohen-Macaulay type and projective dimension are both determined by the number of induced cycles minus one, and the regularity is equal to the matching number of _0, a derived graph with vertices of degree one successively removed. The author finds the results intriguing but points out a lack of detailed explanation of algebraic tools and suggests using examples to clarify concepts. They propose expanding the initial section to better explain key concepts, even though the main characterization of compact graphs might not require advanced algebraic tools. The author ultimately recommends the paper for publication in journals specializing in algebraic graph theory.